



Figure 1. Approximate colours of the TG system for grading sputum purulence. Clockwise from the top left are the grades TG1 to TG4. TG0 is paper white and is not specifically shown.

lung disease will have met patients who fail to improve until the purulence of the sputum improves, either with time or with a change in antibiotic. In order to quantify changes in sputum purulence, this writer has for many years used an arbitrary grading system, historically called the TG system. It has a range from TG0 (white sputum) to TG4 (dark green sputum). With practice it is fairly easy to grade any sputum purely on inspection and to record changes from day to day. A failure of the sputum to improve after three days of a particular antibiotic should lead to consideration of a change in treatment. Equally, improvement in the sputum grade should encourage continuation with the current antibiotic even if sensitivities suggest otherwise.



Figure 2. An artistic representation of the TG system by Mrs Janet Clarke and Miss Bethan Clarke.

Unlike the commercial scale, the TG system is completely unvalidated and as it lacks a standard reference chart there are bound to be some differences between observers. However it has the advantage of simplicity and it avoids the problems of unquantified references to "sputum purulent" found in many inpatient notes. Figure 1 shows an approximation of the grades TG1 to TG4 developed by scanning a sputum assessed as TG4 and sampling the image in Adobe Photoshop CS. The resultant average colour in the CMYK system was C46, M24, Y42, K1, and the colours for TG3 to TG1 were obtained from it by reducing the opacity to 75%, 50% and 25% respectively. TG0 would be white.

The sputum to be inspected should be placed in a jar, either white or transparent, rather than on a tissue where it tends to lose colour. It should be standard practice for sputum jars to be supplied to patients and not renewed until the sample has been seen, preferably on a daily basis. Extraneous colour from sweets and food is usually not a cause for confusion.

I am indebted to the artists for their interpretation of the TG system shown in Figure 2.

The author has no conflict of interest.

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Cerebral Abscess in a 16 year old boy

Editor,

We present an unusual case of Cerebral Abscess in a 16 year old boy

Clinical Presentation: A 16 year old boy was admitted with a one week history of an upper respiratory tract infection (URTI). On the day of admission he complained of severe frontal headache, 10/10 in severity, and had vomited three times. He complained of neck stiffness and photophobia. On questioning his parents, they found him mildly confused and had noticed his difficulty in retaining new information. He had no psychiatric or behavioural symptoms other than lethargy. Before admission he had a complex generalised seizure lasting less than a minute. He had no history of alcohol or drug abuse, no travel history and no rash. His General Practitioner had commenced ciprofloxacin 250 mg twice daily one day prior to his admission. On examination he had pyrexia of 39.5°C. There was no focal neurology; Glasgow

coma scale was 15/15. His cranial nerves were intact, tone, power, and reflexes were normal with flexor planter responses. He had no objective signs of neck stiffness with a negative Kernig's sign. On fundoscopy there was no papilloedema. Other systemic examination was unremarkable with normal ECG and chest X-ray.

Differential diagnosis & management: A probable diagnosis of meningitis was made and differentials of encephalitis, space occupying lesion or viral illness were considered. He was treated with cefotaxime & acyclovir. Computed Tomogram (CT) of brain showed an epidural abscess measuring 2.2×1.4 cm in left frontal region. He was immediately transferred to the regional neurosurgery department and underwent drainage of the abscess through a left frontal burr hole. The patient remained stable but after five days required further burr hole decompression. Streptococcus constellates and milleri were isolated from the pus. He was discharged on Ertapenam 1g intravenously daily.

Discussion: Once a fatal condition and a complication of URTI and sinusitis, cerebral abscess is rare in Western society. This is due to extensive use of broad spectrum antibiotic therapy. The incidence of cerebral abscess is about 4 cases/million/year and it is ten times less common than a brain tumour. Once recognised it is a neuro-surgical emergency. This case illustrates that although rare, the condition can complicate an apparent benign URTI in a young and fit patient with no previous morbidity. Symptoms can be non specific and neurological signs subtle.

CT and magnetic resonance imaging (MRI) are essential tools that enable the diagnosis of intracranial purulent collections. Delay in surgical drainage can be associated with high morbidity and case-fatality rates.¹ The infection can originate from contiguous sites of existing infections, such as chronic otitis media, dental infection, mastoiditis, or sinusitis, where anaerobic bacteria predominate.²

Close coordination of care between neurosurgeons and infectious diseases specialists is important in the management. The relative rarity of brain abscess and the frequent delays in making the diagnosis render this condition a significant challenge for the clinician.³

Conclusion: Cerebral Abscess should be considered in ill patients presenting with pyrexia and neurological symptoms.

The authors have no conflict of interest.

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